

Title (en)

METHOD OF MANUFACTURING BALL JOINT AND HOUSING FOR THE BALL JOINT

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES KUGELGELENKES UND GEHÄUSE FÜR EIN KUGELGELENK

Title (fr)

PROCEDE DE FABRICATION D'UN JOINT A ROTULE ET LOGEMENT POUR JOINT A ROTULE

Publication

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Application

EP 00937297 A 20000619

Priority

- JP 0003984 W 20000619
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Abstract (en)

[origin: EP1191241A1] An intermediate molding (41) is formed so that a cylindrical arm-to-be portion (42) projects from the cylindrical outer surface of a body portion (13) of the arm-to-be portion (42). The arm-to-be portion (42) has a given thickness and a hole (42a) with a diameter greater than the inner diameter of a projecting connector portion (20) of an arm portion (15). A pair of flat face portions (42b) extending parallel to the axis of the body portion (13) are formed on the cylindrical outer surface of the arm-to-be portion (42). A tap (44) that has an external thread (43) formed along its cylindrical outer surface is inserted into the hole (42a) of the arm-to-be portion (42). Concave faces (49),(49) are concaves respectively formed on the opposing surfaces of an upper die (47) and a lower die (48) so as to have a shape like a half cylinder with a curvature corresponding to that of the cylindrical outer surface of the projecting connector portion (20). The concave faces (49),(49) sandwich and apply pressure to the arm-to-be portion (42), thereby narrowing the arm-to-be portion (42) and forming an internal thread (19) in the cylindrical outer surface of the hole (42a) of the arm-to-be portion (42). With the tap (44) being removed while being rotated, formation of the arm portion (15) is completed. Compared with a method that calls for forming an internal thread (19) by threading with an external thread (43) of the tap (44), the method of the invention enables the easier and quicker formation. The invention also prevents wear of the tap (44) and enables the easy formation of the projecting connector portion (20) of the arm portion (15) having stable characteristics and a desired internal thread (19). <IMAGE>

IPC 1-7

F16C 11/06; **B23G 1/16**; **B21H 3/08**

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Citation (search report)

- [XAY] FR 2176294 A5 19731026 - GEMMER FRANCE [FR]
- [X] US 6038771 A 20000321 - TAKEHARA NOBUYUKI [JP], et al
- [X] US 5492427 A 19960220 - ERSOY METIN [DE], et al
- [XY] EP 0705990 A2 19960410 - THK CO LTD [JP]
- [Y] US 687464 A 19011126 - SULLIVAN WILLIAM E [US]
- [A] US 3239930 A 19660315 - ANDRE VIOLLEAU
- [A] WO 9712155 A1 19970403 - TRW FAHRWERKSYST GMBH & CO [DE], et al
- [X] PATENT ABSTRACTS OF JAPAN vol. 014, no. 447 (M - 1029) 25 September 1990 (1990-09-25)
- See references of WO 0175317A1

Cited by

CN101875085A; US8561730B2; WO2011119408A3

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